

## ABSTRACT OF THE DISCLOSURE

A SAT estimating portion obtains an estimated SAT value based on a sum of steering torque and assist torque. A SAT model value calculating portion calculates a SAT model value based on a slip angle. A SAT ratio calculating portion calculates a ratio between the estimated SAT value and the SAT model value. A SAT reference value calculating portion determines that a contact length between a tire and a road surface increases due to an increase in a load of a vehicle or a reduction in a tire pressure, and a SAT inclination increases, and obtains a SAT reference value by upwardly adjusting the SAT model value when a maximum value of the SAT ratio exceeds a threshold value in a predetermined time.